REMARKS

This paper is responsive to an Official Action that issued in this case on 27 March 2007. In that Action, the Office rejected all pending claims on the following bases:

- Claims 1, 3, 5, 10-17, and 20-28 under 35 USC §102 as being anticipated by U.S. Pat. No. 6,470,302 to Cunningham *et al.*;
- The remaining dependent claims were rejected under 35 USC §103 as being obvious over Cunningham *et al.*, and further in view of one of several secondary references; and
- Claim 7 under 35 USC §112, ¶2 as being indefinite.

Claims 1, 4, 7-10, 12, 17, and 20 have been amended to more particularly point out applicants' invention. Reconsideration is respectfully requested in view of the foregoing amendments and the following comments.

Rejection of Claim 7 under 35 U.S.C. 112

The Office rejected claim 7 under 35 U.S.C. 112, ¶2 as lacking antecedent basis for the term "bezel." Claim 7 is hereby amended to change its dependency from claim 1 to claim 2. Since claim 2 recites "a bezel," the requisite antecedent is now provided for the term "bezel" in claim 7.

Rejection of Independent Claim 1 under 35 U.S.C. 102 Over Cunningham

Amended Claim 1 recites an apparatus comprising:

> a needle;
>
> a catheter, wherein said catheter receives said needle; and
>
> a sensor, wherein said sensor senses an angular orientation of at least one of:
>
> (i) a feature of said needle; and
>
> (ii) a feature of said catheter,
>
> relative to an axis aligned with a length of said needle or said catheter.

Claim 1 has been amended to clarify the specific orientation that is being sensed by the sensor. In particular, the orientation that is being sensed is the *angular* orientation of a

feature of the needle (or catheter), *relative to the long axis of the needle* (*or catheter*). This is to be distinguished, for example, from the orientation of the needle or catheter in space (which is determined by other sensors in other parts of the apparatus).

The Examiner alleges that the device that is disclosed in Cunningham "senses an orientation of at least one of a feature of the needle or a feature of the catheter," citing to col. 5, lines 55 through col. 6, lines 11.

As disclosed at col. 9, lines 21+, the various degrees of freedom of the Cunningham devices include the pitch of catheter needle assembly, which is provided by the axis of rotation of bearing (42), the yaw of the catheter needle assembly, which is provided by the axis of rotation of bearing (58), and translation of the catheter needle assembly, which is provided by translation of shaft (44). (See, Figure 4.)

The device that is disclosed in Cunningham does not measure the angular rotation of shaft (44) or of catheter needle assembly 47. Furthermore, there is no suggestion to do so.

As a consequence, claim 1 is allowable over Cunningham. Claims 2 through 11 are allowable based on their dependence on claim 1. Furthermore, the recitation of additional patentable features in these claims provides a secondary basis for their patentability. In view of the foregoing, applicants request that the rejection of claims 1-11 be withdrawn.

Rejection of Independent Claim 12 under 35 U.S.C. 102 Over Cunningham

Amended Claim 1 recites an apparatus comprising:

> pseudo skin;
>
> a force-feedback assembly, wherein said force-feedback assembly is disposed beneath said pseudo skin; and
>
> an end effector, wherein said end effector passes through said pseudo skin to reversibly couple to said force-feedback assembly.

Cunningham does not disclose or suggest what is recited in amended claim 12.

First, in Cunningham, the force-feedback assembly is not disposed beneath the pseudo skin. In Cunningham, the pseudo skin — belt (108)— is disposed in skin traction mechanism (36). Cunningham's force-feedback unit (54), however, is positioned below

catheter needle assembly (47) and disposed within case (32). As is clear from FIGs. 3 and 4, the force-feedback unit is *forward* of the skin traction mechanism, which is disposed *outside* of the housing or case (32). The skin traction mechanism resides within its own special casing (127).

Second, in Cunningham, the end effector does not reversibly couple to the force feedback mechanism. The "end effector" in Cunningham is catheter needle assembly (47). In fact, catheter needle assembly (47) is not even in contact with the force-feedback assembly (54). In this prior-art device, it is shaft (44) that is coupled to force-feedback assembly (54). Catheter needle assembly 47 is received by shaft (44). Then, the combined shaft/catheter-needle assembly is collectively manipulated.

In this regard, it is interesting to note that to initialize the device disclosed in Cunningham, catheter needle assembly (47) is inserted into shaft (44). Then, to actually perform a vascular access simulation, the combined shaft/catheter needle assembly is manipulated. So, there is no sense of actually inserting the catheter needle assembly into anything as part of the simulation. The simulation begins *after* the needle-catheter is already inserted into shaft (44).

Third, in Cunningham, the end effector does not pass through the pseudo skin (belt 108) to couple to the force-feedback assembly. It is clear that in Cunningham, the end effector never passes through belt (108).

Since Cunningham does not disclose or suggest what is recited in amended claim 12, that claim is allowable the reference. Claims 13 through 19 are allowable based on their dependence on claim 1. Furthermore, the recitation of additional patentable features in these claims provides a secondary basis for their patentability. In view of the foregoing, applicants request that the rejection of claims 12-19 be withdrawn.

Rejection of Independent Claim 20 under 35 U.S.C. 102 Over Cunningham

Amended claim 20 recites an apparatus comprising

> an end effector;
>
> a housing, wherein said housing has an opening;
>
> pseudo skin, wherein said pseudo skin covers said opening in said housing; and
>
> a receiver for receiving said end effector, wherein said receiver is disposed in said housing.

Cunningham does not disclose or suggest what is recited in amended claim 20.

In Cunningham, the "pseudo skin," which would be belt (108) [to the extent that a pseudo skin is disclosed in this reference at all], does NOT substantially cover an opening in the housing (that contains the receiver).

Amended claim 20 is allowable over Cunningham since that reference does not disclose or suggest the subject that is recited in that claim. Claims 21 through 28 are allowable based on their dependence on amended claim 20. Furthermore, the recitation of additional patentable features in these claims provides a secondary basis for their patentability. In view of the foregoing, applicants request that the rejection of claims 20-28 be withdrawn.

The secondary references disclosed by the Office, whether taken alone or in combination with Cunningham, do not provide any disclosure that would serve as a basis for rejecting the pending claims.

Conclusion

It is believed that claims 1-28 now presented for examination are allowable over the art of record. A notice to that effect is solicited.

If there are remaining issues, the applicants respectfully request that Examiner telephone the applicants' attorney at 732-578-0103 x12 so that those issues can be resolved as quickly as possible.

Respectfully
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